Handheld Satellite Stations

Meeting FCC Part 97.1
With a Superb Tool for
Recruiting New Operators

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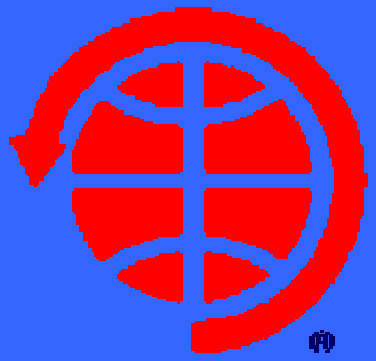
Several times a day, American amateur radio operators are using low-cost handheld stations to demonstrate the entirety of FCC Part 97.1, which defines the fundamental purpose of the amateur radio service.

These handheld stations are superb tools for use in recruiting new licensed amateurs – especially young people – and, as such, should be at the forefront of efforts to promote amateur radio to the public.

Jacob – K4ZAU – EM64



Assembling a top-notch HHS is affordable

Dual-band radios capable of satellite contacts start at under $200

Antennas capable of providing satellite contacts range from $35 to $140

$35 – Pryme AL800 dual-band whip antenna
$90 – Elk 2M/440L5 log periodic antenna
$140 – Arrow 10WBP dual-band crossed yagi with 10-watt duplexer

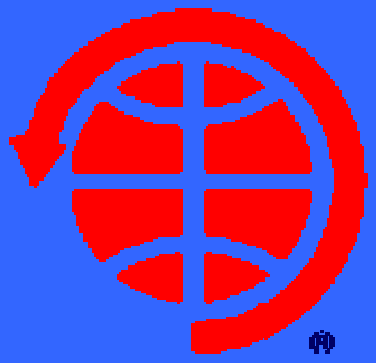
ICOM
KENWOOD

FCC Part 97.1 (a)

"Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications."

- **Transmitting pertinent information accurately and quickly**

- **Receiving pertinent information accurately and quickly – generally without need for repetition**



FCC Part 97.1 (b)

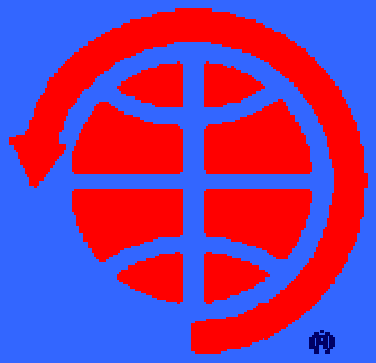
"Continuation and extension of the amateur's proven ability

to contribute to the advancement of the radio art."

- **Refining skills necessary to consistently make contacts using a handheld station:**
  - **Manually tracking the satellites**
  - **Learning and using GPS to find precise location(s)**
  - **Using a compass to provide more accurate manual-tracking**

The very fundamentals of HHS operation require amateurs to not only contribute to the advancement of the radio art, but also to contribute to the art of quickly and accurately finding and reporting their locations, and to using the skills necessary to generate the most effective signals possible.

SATELLITE ALIGNMENT COMPASS
BRUNTON
MADE IN U.S.A.
WEST DECLINATION
EAST DECLINATION
1. Determine heading.
2. Turn azimuth ring to desired heading.
3. Turn compass to align the red arrows.
4. Point dish in same direction as black arrow.
5. Adjust elevation of dish with protractor.



FCC Part 97.1 (c)

"Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art."

- **Handheld-station operation provides specific opportunities, including:**
- **Use of various commercial and homebrew antennas, including small-but-efficient whips**
- **Use of very low power levels and the most basic of power sources**

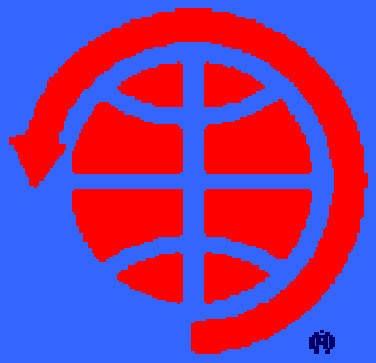
Current rules permitting newly licensed amateurs with a Technician license to begin HHS satellite operation are precisely intended to permit the kind of research Allen F. Mattis, N5AFV, and I have undertaken with antennas and very low power, respectively. In the process, any amateur who tries HHS operation with either or both also will improve his or her operating skills.

Hockey Stick
Antenna
WB8LZG

Allen – N5AFV

The Duracell Experiment

SATELLITE	*CONTACTS*	*AVERGE ELEVATION*	*AVERAGERANGE*
AO-51	32	37.878 DEGREES	1,274.468 KM
AO-27	13	34.269 DEGREES	1,452.774 KM
SO-50	6	30.850 DEGREES	1,386.619 KM

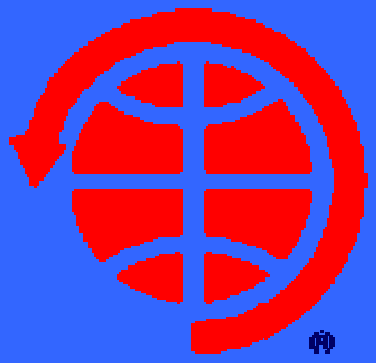


FCC Part 97.1 (d)

"Expansion of the existing reservoir within the amateur radio service of trained operators, technicians and electronics experts."

- **Handheld-station demonstrations take very little time**
- **The "band" *will* be open**
- **HHS contacts with stations across North, Central and South America**
- **The most basic of amateur licenses permits satellite operations**
- **A fully effective handheld station can cost less than an xBox 360 console and 2-3 games**

HHS operation on the FM LEO satellites is one of the best and most important tools we can use to expand our ranks.

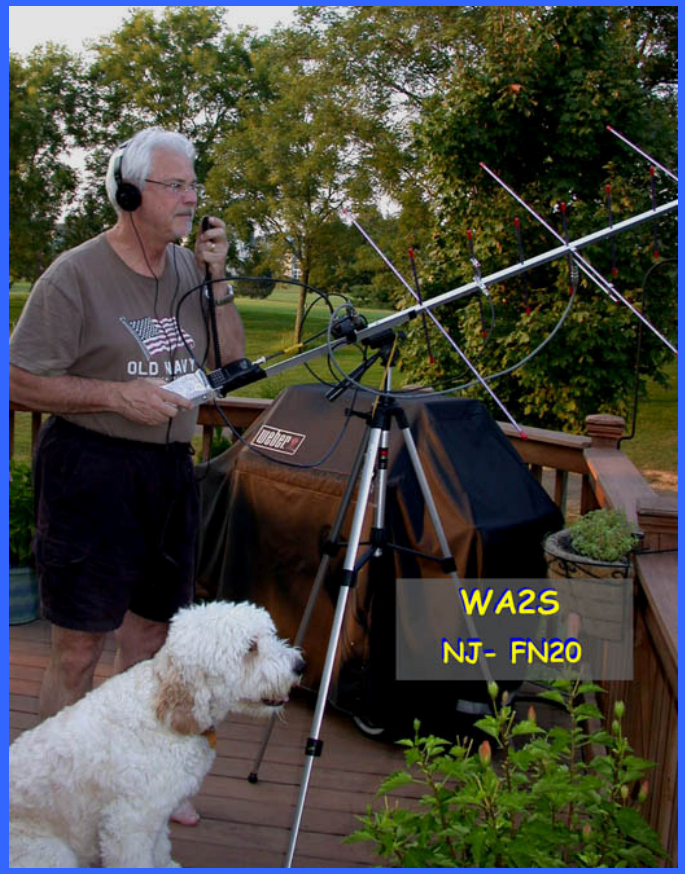


FCC Part 97.1 (e)

"Continuation and extension of the amateur's unique ability to enhance international goodwill."

- **Regular opportunities for contacts with stations in Canada, Central and South America**
- **Frequent opportunities for contacts with stations in the Caribbean**
- **Opportunities for ongoing dialogue through AMSAT-BB and other Web sites**
- **Opportunities to provide "rare DX" to an international station**
- **The unique ability to build true international friendships**

When you work the FM LEO satellites … the station you work might be handheld!

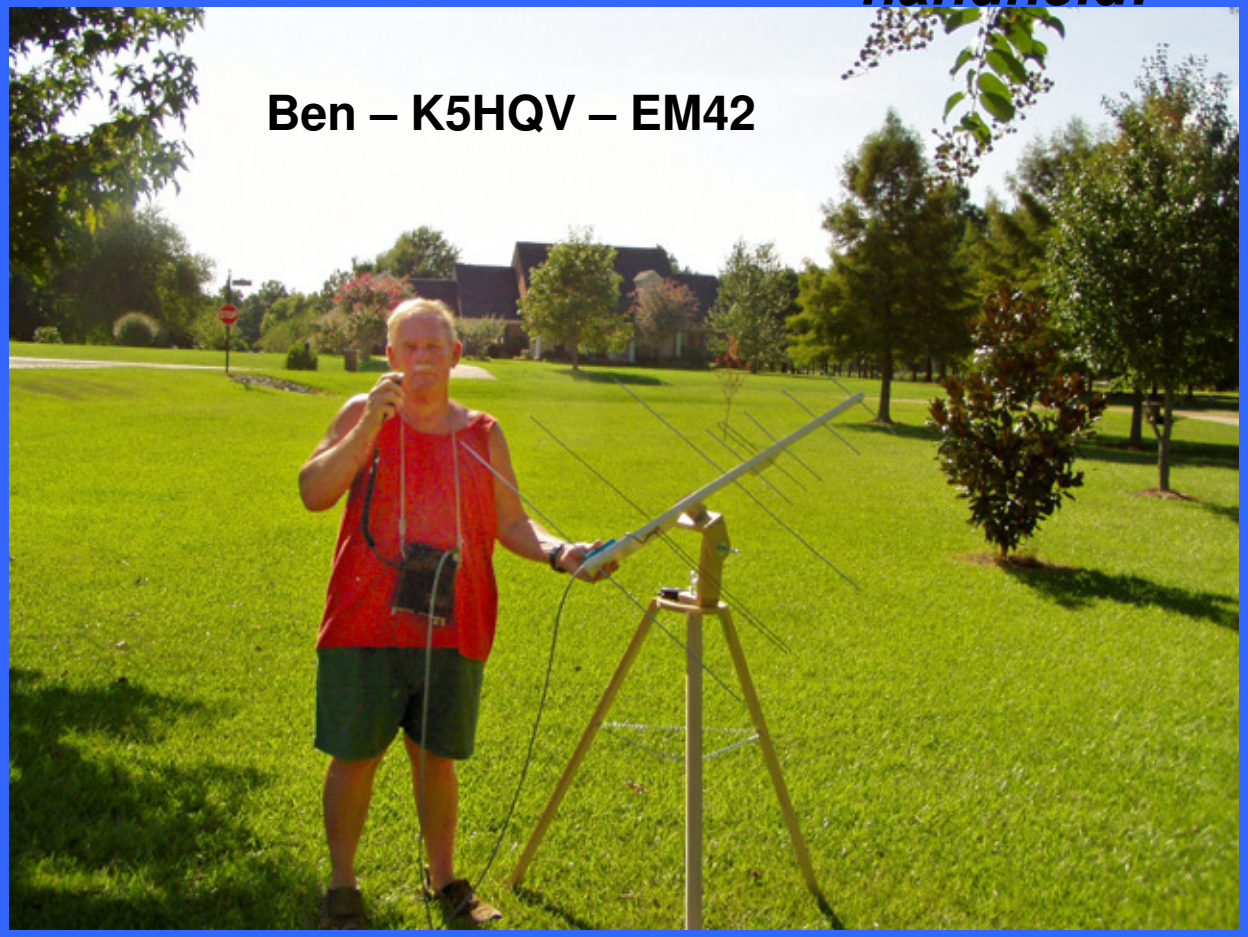


When you work the FM LEO satellites … the station you work might be handheld!

Kirk – KC8TTT – EN82

Rick – WA4NVM – EM55

When you work the FM LEO satellites … the station you work might be handheld!



When you work the FM LEO satellites … the station you work might be handheld!

When you work the FM LEO satellites … the station you work might be handheld!

Rafael – XE2RV
AO-27 from DL56
By XE2PWF

Don’t be surprised to hear a handheld station in front of the Big Guns!!!!